

ABSTRACT

Disclosed is a method of manufacturing a semiconductor package device. In one embodiment, the method includes providing a package substrate having a first coefficient of thermal expansion and at least one bonding pad on the substrate. The method also includes forming an integrated circuit chip having electrical devices, having at least one coupling structure for electrically coupling the chip to the at least one bonding pad, and having a second coefficient of thermal expansion different than the first coefficient of thermal expansion. The method further includes removing a portion of a thickness of the chip that is free of the electrical devices sufficient to allow the chip to distort substantially with the substrate during temperature changes despite the mismatch in their respective coefficients of thermal expansion. The method also includes bonding the chip to the substrate using the at least one coupling structure and the at least one bonding pad.